present engaged, without adding a further contribution, and I hope not an unimportant one, to what is known respecting the nature of the deep-sea mud.

You speak of the chemical behaviour of these masses. The question whether these minute organisms represent animals or plants is still open. I have exposed the ooze to the action successively of a solution of iodine, of iodine and sulphuric acid, and of zinc chloride with potassium iodide, and have each time obtained in a remarkable manner a distinct blue colour, different shades from violet to green, in the substance of the coccoliths. There must therfore exist in the organism of the coccoliths, besides the calcareous skeleton, a kind of cellulose. Their organic nature is thus established beyond all doubt; but the conclusion might after all be drawn that we are dealing with plants, were it not that in the animal kingdom cellulose has been found in the Ascidians. But it is at all events interesting here on the boundary of organic life, to meet with cellulose. As a confirmatory test, I treated the substance with Millons' test which, as is well known, colours conchiolin red, but leaves the chitin of the *Orthropoda* on the other hand unchanged.

I obtained by this means no red colour in the flakes belonging to the coccoliths after the limestone had been dissolved by the excess of acid. A red colour showed itself, on the other hand, in many other particles, for instance, in the *Polycistineæ* whose siliceous coat was coloured red at the margins; and in irregular patches, which appeared to be derived from broken and crushed mussel-shells. I also noticed much deep brown and yellow colour. Especially by treatment with different chemical reagents, differentiated minute particles make their appearance which can scarcely be recognised by my microscope, and which, before the treatment with the chemical reagents, cannot be by any means detected. I expect that by this method an important extension of our knowledge of the most minute forms of organic life will be effected. I will only mention further that the red of the conchiolin shows itself of a bright red in the smallest particles which are found in such great numbers in the agglomerated flakes (*Bathybius*), and which are smaller than the little elevations on the epidermal structures, which probably belong to *Holothuridæ*, and which frequently occur in the field of the microscope.

I should like to pursue further the chemical side of these investigations; but, unfortunately, the supply sent over to me is almost exhausted. If you consider these researches of sufficient importance to be worth continuing, and could obtain further material for me for this purpose, I should be greatly indebted to you. If you can make any use of this communication, it is at your service.

NOTES

PROBABLY few are aware of the magnitude or special aim of the Cornell University. While our own rulers can scarcely grapple with the Education question because of the unsettled state of Ireland, the Government of the United States laid the foundation, during the height of the most terrible struggle for existence of modern times, of one of the most important educational movements the world has ever seen. On the 2nd of July, 1862, Congress passed an Act granting public lands to the several States and Territories which might provide colleges for the benefit of agriculture and the mechanical arts; the share of the State of New York amounting to 990,000 acres. In 1865, this grant was conferred on a University about to be established, on the condition that the Hon. Ezra Cornell should give to the institution 500,000 dollars, with a few other conditions. This munificient grant was afterwards supplemented by another of 200,000 dollars; and the University was established at the village of Ithaca. It is needless to say that the Act of Inauguration provides that the education shall be given to all comers irrespective of creed, colour, or race; the motto of the founder being, "I would found an institution where any person can find instruction in any study." Besides the original grants, the University has since been enriched by private liberality, with gifts of public buildings, laboratories, libraries, museums, a herbarium, printing-press, &c. A simple, but, as far as it goes, a strict entrance examination in geography, English grammar, and arithmetic and algebra, admits intending pupils as undergraduates, and they can then take their choice of pursuing their studies in either of several departments in which degrees are conferred, in Science, Philosophy, Arts, or in some other special subjects, the full course extending over four years. The special feature of the University, however, is what is called the voluntary labour scheme, by which students are enabled to work out a portion or the whole of the expenses of their education, either by unskilled labour on the farm, or by skilled labour at the printing-press or workshops. The University Register just published states that the scheme has thus far been worked with a degree of success hardly to be expected at so early a stage. We shall look with great interest on the progress of the University.

WE are in a whirl of soirées. Last Saturday the second Royal Society's soirée of the season drew together a brilliant gathering, and we shall next week give an account of the scientific novelties exhibited. On Wednesday the President of the Linnean Society's conversazione came off, and to-morrow Sir R. Murchison, the president of the Geographical Society, receives his friends at Willis's Rooms.

THE question of admitting lady students of medicine to classes in the Edinburgh University on the same footing as other students was discussed at the half-yearly meeting of the University Court on the 19th inst. Professor Masson moved a resolution in favour of so admitting them, and quoted Miss Pechey's case in support of his motion. Mr. Balfour, Professor of Botany, seconded the resolution. Mr. Laycock, Professor of Physic, moved a negative resolution. Professor Christison seconded the amendment, which was carried by 58 votes against 47 in favour of the motion.

A PROPOSITION was some time ago made to telegraphists by Mr. Robert B. Hoover, of Alleghany, Pennsylvania, to present Professor Morse, the "father of the telegraph," with a testimonial upon his eightieth birthday. The response was general, and the nucleus of a fund was immediately raised. It has since been found that this fund will warrant the casting of a bust, or perhaps a full-length figure, of the professor; so the original idea of making Professor Morse a birthday testimonial has been abandoned, and a really national one is to take its place.

THE corner-stone of a new college for Melbourne, which is to be affiliated with the Melbourne University, under the title of Trinity College, was laid on the 10th February, by the Right Rev. the Bishop of Melbourne. The building stands near the south-west corner of the reserve, to the north of the University, and considerable progress in the erection of it has already been made by the builder. Only a small portion of the whole design, namely, the Provost's lodge, &c., has been undertaken, and it is to cost 7,500*l.* The funds in hand amount to 4,000*l.*, and the buildings will be carried out as far as the money will allow.

THE schooner yacht *Norna*, Mr. Marshall Hall, owner and master, is fitting out to dredge off the west coast of Spain and Portugal. Mr. W. S. Kent, of the British Museum, and Mr. Edward Fielding accompany the expedition.

EVENING Technical Schools are to be established in the chief towns of Massachusetts. A museum of mechanical inventions and models of machinery are to be formed in connection with each, and there is to be one instructor for every twenty-five pupils.

WE regret to have to announce the death, in his 82nd year, of Mr. Jonathan Couch, of Polperro, Cornwall, a well-known naturalist. His name is especially associated with ichthyology, the standard works of Bewick and Yarrell owing much to his assistance; his own work on the subject being also a very valuable one. Hs was also a frequent contributor on various branches of Natural History to the scientific journals. A correspondent of the *British Medical Journal* states that he was a good linguist, and devoted a considerable time to antiquities. He was a man in whom simple tastes were combined with persistent industry and very accurate powers of observation, and was one of few in whom these qualities were not spoiled by easy circumstances.

THE photographic journals announce the sudden death, in his 72nd year, of a distinguished photographer, M. Niepce de St. Victor, one of the most skilful and indefatigable of experimentalists, and unquestionably the practical originator of photography on glass plates. His name will, however, be associated chiefly with the process of photo-engraving.

THE conversazione of the Society of Arts is fixed to take place at the South Kensington Museum on Wednesday evening, the 4th of May. Cards of invitation have been issued.

IT will be remembered that on the 13th of July last a deputation from the Council and India Committee of the Society ot Arts waited on the Duke of Argyll for the purpose of urging the Government of India to take steps for providing a Department of Agriculture for India. The Council have great pleasure in announcing that a Department of Agriculture and Commerce for India has now been established, and that Mr. Rivett Carnac has been appointed the secretary.

AT the last meeting of the Society of Arts, a valuable paper was read by Mr. Alexander J. Ellis on a practical method ot meeting the spelling difficulty in school and in life, which was followed by an interesting discussion.

A SERIES of ladies' classes has been arranged at Blackheath, and a large number will attend lectures by the Rev. Stopford Brooke, and Professors Seeley, Miller, and Duncan.

Mr. W. RALSTON will deliver a lecture at St. George's Hall, Langham-place, at 4 p.m. on Wednesday, May 4, on "Russian Folk-lore," which will be illustrated by a number of stories taken from the "Skazki" (or prose tales answering to Dasent's "Tales from the Norse," or Grimm's "Mährchen"), with a few notes on their historical, mythological, and social bearings.

DR. HOOKER'S "Student's Flora of the British Isles" is announced as nearly ready. It will contain fuller descriptions of the orders, genera, and species of British plants than the existing manuals aim at giving, together with the distribution of the species in area and altitude, and their hitherto recognized sub-species and varieties. The method adopted will differ from those of the author's predecessors in many points, and the whole will be contained in a pocket volume suited for the class-room and the field.

A PECULIAR variety of *Chamælio Vulgaris*, found near Bughodeer, on the Grand Trunk Road, was presented by Mr. H. Hexter to the Asiatic Society of Bengal, Calcutta, on January 5. Dr. Stoliczka, the palæontologist of the Indian Survey, said that the specimen was very interesting, and of a kind not often found in India so far north. It was fully 12 inches long, the tail measuring slightly more than half. Dr. Günther remarks in his "Reptiles of India," p. 162, that most of the Indian specimens are of a green colour. The present specimen was a distinct greyish olive, having throughout a slight green tinge, which Mr. Hexter stated appeared to have been more prevalent and variable during the life of the animal; but faded quickly after its death. Each side was marked with eight irregular orange brown cross bands. The head, the greater part of the feet, and part of the tail were bright yellow. The animal is more fully described in the the Society's *Proceedings*, 1870. No. 1.

FROM Thorell's Essays on European Spiders ("Nova Acta regiæ Societatis Scientiarum Upsaliensis," ser. III. vol. vii. fasc. 1, 1869), we extract the following observations, first suggested by M. Westring, a Swedish naturalist, on the best mode of preserving spiders in Natural History collections. The essential feature of the method is that the spider's *abdomen*, and that part only of its body, is *hardened by heat.* The spider is first killed, either by the vapour of ether or by heat, and is impaled by an insect pin, which is passed through the right side of the cephalo-thorax; the abdomen is then cut off close to the cephalo-thorax, and the cut surface dried with blotting-paper. The head of another insect pin is cut off, and the blunt extremity introduced through the incision into the abdomen, up to the spinners. The abdomen thus spitted is inserted into a large test-tube held over the flame of a candle, the preparation being constantly rotated till dry, avoiding the extremes of too much or too little heat—the firmness of the abdomen being tested every now and then with a fine needle, till it is so firm as not to yield to pressure; the front extremity of the pin is now cut off obliquely, and the point thus made inserted into the cephalo-thorax, the two halves of the body being thus again brought into apposition. The animal may then be mounted as usual. This method is stated by Mr. Thorell to preserve the appearance of the animals almost entirely unchanged.

AN attempt is being made to cultivate the Japanese tea-plant in California. 27,000 trees have been imported.

THE third course of Cantor Lectures of the Society of Arts for the present session is being given by Professor A. W. Williamson, The course consists of four lectures, "On Fermentation," on Monday evenings, the 25th of April, and the 2nd, 9th, and 16th of May, at 8 o'clock, and will include an account of important investigations of M. Pasteur. The subjects treated of will be as follows:—Chief varieties of fermentation; chemical processes which take place in the best known processes of fermentation; other chemical processes analogous to them; how these cyclical processes are distinguished from ordinary processes of chemical action; cyclical action analysed; 1. in known cases; 2. in less known cases; theory of "contagiousness" of chemical action; composition of yeast, and changes which it undergoes; assimilation of food by yeast plants during life; decomposition of yeast plants during life; propagation of ferments; prevention of fermentation; germs in air: how removed: how destroyed; processes for arresting fermentation; wine-making and wine-keeping; chemical changes which improve the quality of wine; chemical changes which deteriorate the quality of wine.—These lectures are open to members, each of whom has the privilege of introducing two friends to each lecture.

A TELEGRAPHIC despatch from Marseilles announces the discovery there, by M. Borelly, of a new planet. Its position on the 19th at 10h. 33m., 13s. was—Right ascension, 13h. 2m. 39s. North declination, 6° 50′ 39″.

THE Italian Parliament is engaged in discussing a vast financial plan of the new Ministry, one feature of which is the suppression of a number of the smaller Italian universities. Irrespective of considerations of economy, it is thought that the cause of education will gain by the concentration of the teaching power of the nation in a few towns where a great educational movement exists. A portion of the scheme which meets with less favour is the suppression of the Superior Institute of Florence, an establishment which, the capital having no University, somewhat supplies the place of a national college and musuem, and which numbers among its staff the distinguished names of Donati in Astronomy, Maurice Schiff in Physiology, Ugo Schiff in Chemistry, Targioni-Tozzetti in Zoology, and Parlatore in Botany.

THE South Kensington authorities have printed syllabuses of the courses of lectures already delivered at the Museum, under the title of "Instruction in Science and Art for Women." We have before us "Notes of fifteen lectures on Physics, by Professor Guthrie," and "Notes of ten lectures on Botany, by Professor Oliver." We commend both these programmes to lecturers on natural science, as models of what scientific lectures ought to be—thorough, exact, and yet popularly intelligible.

WE have received a German edition, by Dr. Oppenheim, of Wurtz's History of Chemical Theory, from the time of Lavoisier to our own day.

THE *Paisley and Renfrewshire Standard* prints an unpublished letter of Wilson the ornithologist. It is dated Nashville, Tennessee, May 1st, 1810, and deals more with the manners and customs of the people than with his favourite science of Ornithology.

MR. KEITH JOHNSTON, jun., publishes a map of the Lake Region of Eastern Africa, showing the sources of the Nile, recently discovered by Dr. Livingstone. To it is appended an interesting account of the progress of discovery in the Lake Region, with notes on its physical features, climate, and population.

DR. J. LEON SOUBEIRAN has reprinted from the Annals of the Linnean Society of Maine-et-Loire an article on the herring fishery, which gives an account of the fishery from the earliest times in the different countries of Europe, and of the various modes of curing the fish.

THE *Architect*, for April 9, describes the projected new buildings for Owens College, Manchester. The designs for the first portion being now complete, the works will shortly be commenced on a site about a mile to the south of the centre of Manchester, on the west side of Oxford Road. The style of the building is Gothic, of a collegiate and early type.

C. G. EHRENBERG'S "Gedächtnissrede auf Alexander von Humboldt," presented to the Academy of Sciences at Berlin, is a graceful centenary tribute to the memory of the great *savant*.

THE Commissioners for the Annual International Exhibitions of selected works of fine and industrial art and scientific inventions have issued a code of rules for educational works and appliances produced in the United Kingdom, or produced abroad, but submitted to the British judges. We suspect that exhibitors will find it somewhat difficult to determine under which of the denominations named in the commissioners' list they should range themselves; thus we find "philosophical instrument makers," and "optical instrument makers," with separate headings for "microscope makers," "telescope makers," "stereoscope makers," &c. We should hardly have thought that it would have been necessary to make arrangements for the special exhibition of objects under the heads of "coloured saucer makers," "pink saucer makers," "preparers of botanical specimens," "Ward's case makers," &c. Everything intended for exhibition must be sent in by Wednesday, the 8th of February, 1871.

M. CLOEZ has detected in the leaves of *Eucalyptus globulus*, a tree which has been recently largely introduced into France for purposes of ornamentation, a substance extremely analogous to camphor. Ten kilogrammes of fresh leaves give 275 grammes of this new substance, the formula for which is $C_{24}H_{20}O_2$, and its boiling point 175° C.

A MONTHLY journal has been started in Jena devoted to the interest of Sericiculture. We have before us the first number of the *Seiden-bau Zeitung für Nord-deutschland*; bearing the names of Dr. E. Hallier, H. Maurer, and J. Zorn, as Editors.

MADREPORARIA OF THE RED SEA

THE following table is required to complete Prof. Duncan's account in NATURE, No. 24, p. 612, of the Madreporaria dredged up in the *Forcupine* Expedition. The specific names given in the table are those finally adopted by Prof. Duncan :—

Name.	No.	Latitude.	Longitude.	Depth. fathoms.	Temp.	Remarks.
1. Caryophyllia borealis, *Fleming*	2	51° 57 N.	10° 23 W.	30-40	52°·00	Specimens very numerous.
Syn. C. clavus	...	....	....	......	....	The species is found in the coralliferous British seas and Mediterranean. Fossils in Miocene and Pliocene of Sicily. At great depths in Mediterranean (recent).
C. Smithii	88	59 26 N.	8 23 W.	705	42·65	
C. cyathus and many varieties.						
2. Ceratocyathus ornatus, *Seguenza*	88	....	....	705	42.65	One specimen. Not known elsewhere; the genus is, with this exception, extinct. The species is fossil in the Sicilian Miocene.
3. Flabellum laciniatum, *Ed. & H.*	3	51 51 N.	11 50 W.	370	....	Specimens numerous.
Syn. Ulocyathus arcticus, *Sars*	25	56 41 N.	13 39 W.	164	46·5	This is a well-known Norwegian recent form.
4. Lophohelia prolifera, *Pallas*, sp.	5	52 4 N.	12 8 W.	364	48·8	Specimens numerous.
Syn. All the species hitherto published, viz. :—						The variability of this species at different depths is so great that all the known species must in consequence be considered varieties of one form. Recent in Norwegian seas, Mediterranean, and off the Shetlands. Fossil in Miocene and Pliocene deposits of Sicily. A variety is found off the American coast. A considerable number of specimens was found in the "cold area" at depths from 500-600 fathoms.
L. anthophyllites, *Ed. & H.*	13	53 42 N.	13 55 W.	208	49·6	
L. subcostata, *Ed. & H.*	14	53 49 N.	13 15 W.	173	49·6	
L. affinis, *Pourtales*	15	54 5 N.	12 7 W.	422	47·0	
L. Defrancei, *Defrance.*	25	56 41 N.	13 39 W.	164	46·5	
L. gracilis, *Seguenza*	54	59 56 N.	6 27 W.	363	31·5	
and several varieties.						
5. Amphihelia profunda, *Pourtales*, sp.	54	59 56 N.	6 27 W.	363	31·5	Many specimens.
6. —— oculata *Linnæus*, sp.	54	....	....	......	....	The necessity for absorbing *Diplohelia* is stated in the following pages.
7. —— miocenica, *Seguenza*...................	54	....	....	......	....	The species of *Amphihelia* range from the Miocene to the present day; but only *A. oculata* has hitherto been found in recent fauna.
8. —— atlantica, *nobis*	54					
9. —— ornata, *nobis*	54					
10. Allopora oculina, *Ehrenberg*..............	54	....	....	......	....	A few specimens.
		59 40 N.	7 10 W.	530	47·0	Dredged in *Lightning* Expedition. A recent form.
11. Balanophyllia (Thecopsammia) socialis, *Pourtales*, sp.	54	59 56 N.	6 27 W.	363	31·5	These are West Indian forms, and are included in *Thecopsammia*, a subgenus, by Pourtales.
var costata..						
britannica						
Jeffreysia	65	61 10 N.	2 21 W.	345	29.9	
12. Pliobothrus symmetricus, *Pourtales*....	...	....	....	500-600	Cold area.	It is a West Indian form.

Total species, 12; species absorbed, 9. Good varieties numerous. Greatest depth from which species were dredged, 705 fathoms. Lowes temperature of sea at bottom whence corals were dredged, 29°·9.